



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Applicant(s):

Braun et al.

Group Art Unit: 1631

Patent No.:

10/817,530

Examiner: : Eric S. DeJong

Filed:

April 2, 2004

Docket No.: 265.00400101
Confirmation No.: 4868

Title:

**PHYSICAL-CHEMICAL PROPERTY BASED SEQUENCE MOTIFS AND METHODS
REGARDING SAME**

Mail Stop Amendment

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

We are transmitting the following documents along with this Transmittal Sheet (which is submitted in triplicate):

- Small entity status is entitled to be asserted in the above-identified application.**
 An itemized return postcard.
 A Petition for Extension of Time for ___ month(s) and a check in the amount of \$___ for the required fee.
 An Information Disclosure Statement (2 pgs); copies of 0 applications; 1449 forms (5 pgs); and copies of 58 documents cited on the 1449 forms.
 A certified copy of a ___ application, Serial No. ___, filed _____, the right of priority of which is claimed under 35 U.S.C. §119.
 Other: ___
 Amendment ___ No Additional fee is required. ___ The fee has been calculated as shown:

Fee Calculation for Claims Pending After Amendment					
	Pending Claims after Amendment (1)	Claims Paid for Earlier (2)	Number of Additional Claims (1-2)	Cost per Additional Claim	Additional Fees Required
Total Claims				x \$25 =	
Independent Claims				x \$100 =	
One or More New Multiple Dependent Claims Presented? If Yes, Add \$180 Here →					
Total Additional Claim Fees Required					

Please consider this a PETITION FOR EXTENSION OF TIME for a sufficient number of months to enter these papers and please charge any additional fees or credit overpayment to Deposit Account No. 13-4895. Triplicate copies of this sheet are enclosed.

CERTIFICATE UNDER 37 C.F.R. §1.8: The undersigned hereby certifies that this Transmittal Letter and the paper(s), as described hereinabove, are being deposited in the United States Postal Service, as first class mail, in an envelope addressed to: Mail Stop Amendment Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 18th day of April, 2005.

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PATENT
Docket No. 265.00400101

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Braun et al.) Group Art Unit: 1631
)
Serial No.: 10/817,530) Examiner: Eric S. DeJong
Confirmation No.: 4868)
)
Filed: April 2, 2004)
)
For: PHYSICAL-CHEMICAL PROPERTY BASED SEQUENCE MOTIFS AND
METHODS REGARDING SAME

INFORMATION DISCLOSURE STATEMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with C.F.R. §§ 1.97 *et. seq.*, the materials enclosed herewith are brought to the attention of the Examiner as possibly being of interest in connection with the above-identified patent application. Per M.P.E.P. § 609, the information cited in the present Information Disclosure Statement shall not be construed to be an admission that the information is, or is considered to be, material to patentability. Consideration of each of the documents listed on the attached 1449 forms is respectfully requested. Pursuant to the provisions of M.P.E.P. §609, Applicants further request that a copy of the 1449 forms, marked as being considered and initialed by the Examiner, be returned with the next Official Communication.

It is believed that no fee is due, as this Information Disclosure Statement is filed prior to the receipt of any Action on the merits. However, in the event a fee is due, please charge any fee or credit any overpayment to Account No. 13-4895.



Information Disclosure Statement

Applicant(s): Braun et al.

Serial No.: 10/817,530

Confirmation No.: 4868

Filed: April 2, 2004

For: PHYSICAL-CHEMICAL PROPERTY BASED SEQUENCE MOTIFS AND METHODS REGARDING
SAME

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The Examiner is invited to contact Applicants' Representatives at the below-listed telephone number, if they can be of any assistance during prosecution of the present application.

Respectfully submitted for

Braun et al.

By

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CERTIFICATE UNDER 37 C.F.R. 1.8:

The undersigned hereby certifies that this paper is being deposited in the United States Postal Service, as first class mail, in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 18 day of April, 2005.

Name: Mark J. Gebhardt

Date

18 April 2005

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**INFORMATION
DISCLOSURE
STATEMENT**


Atty. Docket No.: 265.00400101	Serial No.: 10/817,530
Applicant(s): Braun et al.	Confirmation No.: 4868
Application Filing Date: April 2, 2004	Group: 1631
Information Disclosure Statement mailed:	April 18, 2005

U.S. PATENT DOCUMENTS

Examiner Initial	Copy Enclosed	Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
		5,845,049	12/01/98	Wu			
		5,878,373	03/02/99	Cohen et al.			
		6,512,981	01/28/03	Eisenberg et al.			

FOREIGN PATENT DOCUMENTS

Examiner Initial	Copy Enclosed	Document Number	Date	Country	Class	Subclass	Translation	
							Yes	No
		None						

OTHER DOCUMENTS (Including Authors, Title, Date, Pertinent Papers, etc.)

Examiner Initial	Copy Enclosed	Document Description
	X	Altschul et al., "Grapped BLAST and PSI-BLAST: a new generation of protein database search programs," <i>Nucleic Acids Res</i> , 1997;25(17):3389-3402.
	X	Bairoch et al., "The SWISS-PROT protein sequence database and its supplement TrEMBL in 2000," <i>Nucleic Acids Res</i> , 2000;28(1):45-48.
	X	Ben-Hur et al., "Remote homology detection: a motif based approach," <i>Bioinformatics</i> , 2003;19(Suppl. 1):i26-i33.
	X	Benner et al., "Amino acid substitution during functionally constrained divergent evolution of protein sequences," <i>Protein Eng.</i> , 1994;7:1323-1332.
	X	"BLAST." [online]. NCBI Blast.National Institute of Health. [retrieved on 2004-07-06].Retrieved from the Internet:<http://www.ncbi.nlm.nih.gov/BLAST/>;1 pg.
	X	Bowie et al., "A method to identify protein sequences that fold into a known three-dimensional structure," <i>Science</i> , 1991;253:164-170.
	X	Brenner et al., "The ASTRAL compendium for protein structure and sequence analysis," <i>Nucleic Acids Res.</i> , 2000;28:254-256.
	X	Chandonia et al., "ASTRAL compendium enhancements," <i>Nucleic Acids Res.</i> , 2002;30(1):260-263.
	X	Chothia et al., "The relation between the divergence of sequence and structure in proteins," <i>EMBO J</i> , 1986;5: 823-826.

EXAMINER	Date Considered

*Examiner: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE STATEMENT	Atty. Docket No.: 265.00400101	Serial No.: 10/817,530
	Applicant(s): Braun et al.	Confirmation No.: 4868
	Application Filing Date: April 2, 2004	Group: 1631
	Information Disclosure Statement mailed:	April 18, 2005

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	X	"ClustalW." [online]. European Bioinformatics Institute (EMBL-EBI). [retrieved on 2004-07-06]. Retrieved from the Internet:< http://www.ebi.ac.uk/clustalw/ >;2 pgs.
	X	Dubchak et al., "Recognition of a protein fold in the context of the SCOP classification," <i>Proteins</i> , 1999;35:401-407.
	X	Eddy, S.R., "Profile hidden Markov models," <i>Bioinformatics</i> , 1998;14:755-763.
	X	"Emotif Maker." [online]. Biochemistry. Standford University, Standford, CA [retrieved on 2004-07-06]. Retrieved from the Internet:< http://fold.stanford.edu/emotif/emotif-maker.html >;2 pgs.
	X	Falquet et al., "The PROSITE database, its status in 2002," <i>Nucleic Acids Res</i> , 2002;30: 235-238.
	X	Gough et al., "SUPERFAMILY: HMMs representing all proteins of known structure. SCOP sequence searches, alignments and genome assignments," <i>Nucleic Acids Res</i> , 2002;30: 268-272.
	X	Gribskov et al., "Identification of sequence patterns with profile analysis," <i>Methods Enzymol</i> , 1996;266:198-212.
	X	Henikoff et al., "Increased coverage of protein families with the Blocks Database servers," <i>Nucleic Acids Res</i> , 2000;28:228-230.
	X	Henikoff et al., "Blocks+: a non-redundant database of protein alignment blocks derived from multiple compilations," <i>Bioinformatics</i> , 1999, 15:471-479.
	X	Henikoff et al., "Protein family classification based on searching a database of blocks," <i>Genomics</i> , 1994;19:97-107.
	X	Higgins et al., "Multiple sequence alignment," <i>Methods Mol Biol.</i> , 2000;143: 1-18.
	X	Holm et al., "Mapping the protein universe," <i>Science</i> , 2000;273:595-602.
	X	Kelley et al., "Enhanced genome annotation using structural profiles in the program 3D-PSSM," <i>J Mol Biol</i> , 2000;299: 499-520.
	X	Kostich et al., "Human members of the eukaryotic protein kinase family," <i>Genome Biol</i> , 2002;3:43.
	X	Kullback et al., "On information sufficiency," <i>Ann Math Stat</i> , 1951;22: 79-86.
	X	Lo Conte et al., "SCOP database in 2002: refinements accommodates structural genomics," <i>Nucleic Acids Res</i> , 2002;30: 264-267.

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	Applicant(s): Braun et al.	Confirmation No.: 4868
	Application Filing Date: April 2, 2004	Group: 1631
	Information Disclosure Statement mailed: April <u>18</u> , 2005	

Examiner Initial	Copy Enclosed	Document Description
	X	Marcotte et al., "A combined algorithm for genome-wide prediction of protein function," <i>Nature</i> , 1999;402:83-86.
	X	Marcotte, E.M., "Computational genetics: finding protein function by nonhomology methods," <i>Curr Opin. Struct. Biol.</i> , 2000;10:359-365.
	X	Martelli et al., "A sequence-profile-based HMM for predicting and discriminating beta barrel membrane proteins," <i>Bioinformatics</i> , 2002;18: S46-53.
	X	Mathura et al., "Identifying Property Based Sequence Motifs in Protein Families and Superfamilies: Application to DNase I related endonucleases," <i>Bioinformatics</i> , 2003;19(11):1381-1390.
	X	Mathura et al., "Automated Generation of Property Based Motifs to Search for Functional Neighbors and to Improve Sequence Alignments," <i>5th Meeting on the Critical Assessment of Techniques for Protein Structure Prediction, CASP5</i> , Asilomar Conference Center, Pacific Grove, CA, December 1-5, 2002: A-178-179.
	X	Mathura et al., "Identifying Property Based Sequence Motifs in Protein Families and Superfamilies: Application to APE," <i>2002 Bioinformatics Symposium</i> , Rice University, Houston, TX, October 14-15, 2002: 37.
	X	Mathura et al., "Defining Physical-chemical Properties based motifs specific for members of the APE family of DNA repair proteins," <i>7th Structural Biology Symposium</i> , UTMB, Galveston, TX, May 17-19, 2002:93.
	X	Mathura et al., "Sequence and Structural Analysis of APE 1 Protein Family Using Physical-chemical Properties Based Motifs," <i>RECOMB, Currents in Computational Molecular Biology 2002</i> , Washington, DC.: 191-192.
	X	Mathura et al., "Physical-chemical properties based motifs for annotating protein sequences from genomic data," <i>Molecular Genomics 2002: Profiling of Gene Expression</i> , UTMB, Galveston, TX, April 5-7, 2002:35.
	X	Mathura et al., "Quantitative Descriptors for Amino Acids Based on Physico-Chemical Properties using Vector Representation," <i>Keck 2000 Symposium</i> , Baylor College of Medicine and Rice University, Houston, TX, October 16-17, 2000: 33.
	X	Mathura et al., "A New Vector Representation of Amino Acids Based on Large Number of Physico-Chemical Properties," <i>Fifth Annual Structural Biology Symposium</i> , UTMB, Galveston, TX, May 19-21, 2000: 54.
	X	Mehta et al., "Recognizing very distant sequence relationships among proteins by family profile analysis," <i>Proteins</i> , 1999;35:387-400.

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	Applicant(s): Braun et al.	Confirmation No.: 4868
	Application Filing Date: April 2, 2004	Group: 1631
	Information Disclosure Statement mailed:	April 10, 2005

Examiner Initial	Copy Enclosed	Document Description
	X	Nagano et al., "One fold with many functions: the evolutionary relationships between TIM barrel families based on their sequences, structures and functions," <i>J Mol Biol</i> , 2002;321:741-765.
	X	Norin et al., "Structural proteomics: developments in structure-to-function predictions," <i>Trends Biotechnol.</i> , 2002;20:79-84.
	X	Overbeek et al., "The use of gene clusters to infer functional coupling," <i>Proc Natl Acad Sci USA</i> , 16 March 1999;96(6):2896-2901.
	X	Oezguen et al., "APE1: Identifying Motifs by MASIA and Metalion Position by MD-Simulations," <i>Keck Center 2001 Annual Research Conference</i> , Galveston, TX, September 21, 2001:35.
	X	Press et al., "Numerical Recipes in C: The Art of Scientific Computing," 1999, Cambridge University Press, New York.
	X	"Prosite Database of protein families and domains." [online]. Expasy Prosite.[retrieved on 2004-07-06]. Retrieved from the Internet.< http://us.expasy.org/prosite/ >;2 pgs.
	X	Rigoutsos et al., "Dictionary-driven protein annotation," <i>Nucleic Acids Res</i> , 2002;30:3901-3916.
	X	Rison et al., "Comparison of functional annotation schemes for genomes," <i>Funct Integr. Genomics</i> , 2000;1:56-69.
	X	Rychlewski et al., "Comparison of sequence profiles. Strategies for structural predictions using sequence information," <i>Protein Sci</i> , 2000;9:232-241.
	X	Schaffer et al., "IMPALA: matching a protein sequence against a collection of PSI-BLAST-constructed position-specific score matrices," <i>Bioinformatics</i> , 1999;16:1000-1011.
	X	Schaffer et al., "Improving the accuracy of PSI-BLAST protein database searches with composition-based statistics and other refinements," <i>Nucleic Acids Res</i> , 2001;29:2994-3005.
	X	Schein et al., "Total sequence decomposition distinguishes functional modules, "moleglos" in apurinic/apyrimidinic endonucleases," <i>BMC Bioinformatics</i> , 2002;3:37.
	X	Schein et al., "Structural and Functional Motifs of Apurinic/Apyrimidinic Endonuclease," <i>Sealy Center for Molecular Science, Science Forum</i> , UTMB, Galveston, TX, March 20, 2002: 7.

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	Information Disclosure Statement mailed:	April <u>10</u> , 2005

Examiner Initial	Copy Enclosed	Document Description
	X	Schein et al., "Structural and Functional Motifs of Apurinic/Apyrimidinic Endonuclease," <i>Keystone Symposia Structural Genomics: From Gene Sequence to Function</i> , Breckenridge, CO, January 5-11, 2002:
	X	Schein et al., "Defining the mode of action of APE1 using MASIA motif searching, MD-simulations and site directed mutagenesis," <i>6th Annual Structural Biology Symposium</i> , UTMB Galveston, TX, May 18-20, 2001: 83.
	X	Truong et al., "Identification and characterization of subfamily-specific signature in a large protein superfamily by a hidden Markov model approach," <i>BMC Bioinformatics</i> , 2002;3(1).
	X	Urushihara, H., "Functional genomics of the social amoebae, Dictyostelium discoideum," <i>Mol. Cell</i> , 2002;13:1-4.
	X	Venkatarajan et al., "New quantitative descriptors of amino acids based on multidimensional scaling of a large number of physical -chemical properties," <i>J Mol Model</i> , 2001;7:445-453.
	X	Waterston et al., "On the sequencing of the human genome," <i>Proc. Natl. Acad. Sci USA</i> , 2002;99(6):3712-3716.
	X	Yona et al., "Within the twilight zone: a sensitive profile-profile comparison tool based on information theory," <i>J Mol Biol.</i> , 2002;315: 1257-1275.
	X	Zhu et al., "MASIA: recognition of common patterns and properties in multiple aligned protein sequences," <i>Bioinformatics</i> , 2000;16:950-951.

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